essentially Central American species but which invade our southern borders.

Geometridists generally can feel grateful to Mr. Prout for the excellent and very thorough piece of work he is doing. One of the greatest handicaps to Lepidopterists is the fact that in many families genera have not been considered with reference to those of the world, but rather new genera after new genera have been erected when only those of a relatively small region was known to the describer. With the literature scattered this method of working could scarcely be avoided, unless, indeed, a student absolutely refused to diagnose any species whose structure placed it quite outside the pale of any genus known from his particular region—even though that region embraced the while of one faunal realm, in which case he would be tolerably secure. But with Mr. Prout's work completed (and we trust that the other parts will follow in rapid succession) there will be little excuse for duplicating genera in the Geometridæ. Of course, we may not always agree with him as to what constitutes generic or subgeneric characters but this is a minor consideration and in no way detracts from the excellence of the work or lessens its usefulness.—John A. Grossbeck.

PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY.[1]

Meeting of March 7, 1911.

A regular meeting of the New York Entomological Society was held in the American Museum of Natural History, March 7, 1911, at 8.15 P. M., with the president, Mr. Leng, in the chair and fifteen members present.

In the absence of Mr. Dickerson, Mr. Engelhardt acted as secretary pro tem.

The arrangement for a joint field meeting with the Brooklyn Entomological Society over Decoration Day at Yapank, L. I., was referred to Mr. Engelhardt.

Mr. Olsen's resignation as a member of the field committee was accepted and Mr. Sleight appointed in his place.

[1] Owing to unavoidable circumstances, the publication of the Society's minutes has been greatly delayed in the past. Such material as is in the hands of the Publication Committee is presented herewith at the request of the Society.

Mr. Comstock spoke on Lycænidæ and based his remarks upon material collected by Mr. Hallinan in the Panama Canal Zone, which region he pointed out as a natural dividing line for many South American species. A beautiful series of specimens particularly rich in Theclas was shown. Mr. Hallinan obtained 51 of the 121 species recorded from the Panama Canal region. In flight Mr. Hallinan mentioned that some of the large iridescent Theclas resemble *Morphos;* others presistently frequent the tops of tall thorn trees where their capture requires much patience and considerable forbearance. Thus of *polybe* and *regalis* after a week's trial in the tops only four specimens were secured.

Mr. Shoemaker told of his collecting experience at Washington, D. C., where he spent two weeks last year during June accompanied by Mr. Davis. He obtained about 3,000 specimens of Coleoptera and Lepidoptera, many of which were new to his collection. Most of the collecting was done on the slopes of the Potomac, both on the Maryland and Virginia sides. Part of his catch including the following species was shown: *Panagæus fasciatus* Say, *Platynus caudatus* Lec., *Callida viridipennis* Say, *Odontonyx trivittis* Germ. *Sandalus petrophypa* Knoch, *Chalcolepidius viridipilis* Say, *Trichius delta* Forst., *Calligrapha amelia* Knab, *Bellamira scalaris* Say, *Cacoplia pullata* Hald, *Statira croceicollis* Makl., *Nemognatha cribraria* Lec., *Cirrhophanus triangulifer* Grt., *Mamestra marinitincta* Harvey, *Plagiomimicus pityochromus* Grt., *Acontia aprica* How. A large number of Carabidæ, Scarabæidæ, etc., were captured in bait bottles, of which seventy were planted and regularly inspected. Excepting condensed milk, which proved not very productive, only a mixture of molasses such as collectors of Lepidoptera generally apply to trees was used as bait.

Mr. Davis showed a number of photographs of the Potomac River region near Washington and also many species of insects of various orders, among them the large bot fly *Cuterebra horripilum* Clarke, the rare dragonfly *Neurocordulia obsoleta* Say, and the little cricket *Myrmecophila pergandi*, which latter species, he thought, ought to be found in New Jersey if looked for in its habitat—ants' nests. Attention was called to the average larger size in a series of *Carabus limbatus* Say from Washington as compared with a series of the same species from the mountains of southern Georgia. As an instance of the predicament a collector is apt to find himself in, Mr. Davis cited his experience in the capture of a bettle *Calligrapha amelia* Knab. The beetle was observed in a difficult position for capture among the twigs of a bush of nimbark, its food plant. But what rendered proceedings still more difficult was the discovery of a copper head coiled below. Mr. Davis had the satisfaction of exhibiting both beetle and snake.

Mr. Pollard spoke on the occurrence of *Chlorippe celtis* at Washington, where at times the butterfly is exceedingly abundant.

Mr. Davis exhibited twenty-four species of insects that he had found attending the glands on the upper side of the leaves of *Populus grandidentata* and called attention to two of them, a bee of the family Halictidæ and a

Crabro wasp which he had observed flying from leaf to leaf and visiting many different glands. It was pointed out that the insects were probably not guided by color in this instance as they would have been in visiting flowers.

Mr. Schaeffer showed a pair of Scarabæid beetles, *Frühstorferia sexmaculata*, from Tonkin China, calling attention to the peculiarly elongated mandibles of the male.

MEETING OF APRIL 4, 1911.

A regular meeting of the New York Entomological Society was held in American Museum of Natural History, Tuesday, April 4, at 8.15 P. M., with President Leng in the chair and eleven members present.

The minutes of the previous meeting were read and approved.

Mr. Grossbeck, chairman of field committee, reported that the next field meeting would be at Roselle Park, April 16.

Under scientific discussion Mr. Barber spoke concerning some Hemiptera including seven new species taken mostly at Lakehurst, N. J.

Mr. Dow, who had recently gone to Jamaica with Mr. Grossbeck, discussed the occurrence of *Papilio homerus* in that island.

Mr. Grossbeck reported briefly on the trip. He had found good collecting at Kingston, where he spent a few days, but otherwise the collecting was not considered good. Poor results were obtained from beating and only three places were found for water collecting. Many specimens of insects were noted in some cases but only a few species.

Mr. Davis exhibited a specimen of *Libellula incesta* Hag. taken at Lake Hopatcong in 1908, with the hind wings shorter by 5 mm. than the forewings, and a specimen of *Deilephila lineata* Fab. in which the wings were of normal breadth but unusually short.

MEETING OF APRIL 18, 1911.

Held at the American Museum of Natural History at 8.15 P. M., with President Charles W. Leng in the chair and sixteen members in attendance.

In the absence of the regular secretary, Mr. Barber was appointed to act as secretary pro tem.

The librarian, Mr. Schaeffer, reported the receipt of publications recently received as follows:

Bulletino della Soc. Entomol. Italiana, XLI, Nos. 1–4.

Boletin do Mus. Goeldi, VI.

Wiener Entomol. Zeit., XXX, Nos. 1, 2, 3.

Georgia State Board of Entomology, Circular No. 10 and Bulletins Nos. 33, 34.

Deutsche Entomol. National Bibliothek, II, Nos. 3, 4, 5, 6.

Verhandlungen d. K. K. zool. bot. Gesellschaft in Wien, LX, Nos. 9, 10.

Coleopterorum Catalogus, Pt. 28.

Mr. Grossbeck, of the Field Committee, reported a successful outing at Roselle Park, N. J., on April 16, at which five members were present. The next outing to be at Jamesburg, N. J., on April 30.

Mr. Osburn, of the Photograph Committee, exhibited an engraved photograph of Prof. John B. Smith presented by Mr. Davis, and one of Mr. Hallinan. Also two views taken in the Panama Canal strip by the latter.

Mr. Engelhardt mentioned the proposed Decoration Day outing at Yaphauk, L. I., from May 27–30. Miss Weeks had promised to accommodate those who attended.

The curator reported on the progress of the work with the local collection. He suggested that the Seifert collection of Lepidoptera should officially be presented to the Museum.

Upon motion of Mr. Angell the secretary was instructed to inform the Museum of the donation of this collection by the N. Y. Entomological Society.

Mr. Leng spoke on *Brachyacantha* and exhibited his collection. He described particularly the distribution and the sexual characters. He referred to the work of Verhoeff on the genitalia, showing in a drawing, in which the parts were extruded, the paramera, penis and sipho described by that author. He said that his paper on the genus was nearly ready to print and would include drawings of all of the species but two thus far described from any part of the world.

Mr. Engelhardt spoke of his collecting experiences on Long Island, illustrating his remarks with a number of insects, principally Coleoptera and Lepidoptera. He pointed out that while much colleting had been done in the western part of Long Island, especially in the vicinity of Brooklyn, the central and eastern parts had been much neglected. That in view of the topography and varied vegetation many interesting records may be expected from the last named regions. Of special interest among the insects shown were: *Dytiscus harrisii, Cyllene crinicornis,* both from Forest Park, Brooklyn, the former a northern beetle, the latter a southern or western species, and its occurrence on Long Island probably accidental. *Albuna pyramidalis* from Bay Shore, the first record from Long Island, is essentially a mountain species, though widely distributed throughout the United States. Its food is as yet unknown. *Sesia sigmoidea* from Woodhaven and Amaganset. A number of specimens were bred from the stalks of low willows growing near the sea shore, but none were found in the roots as reported by Mr. Joutel, who first discovered the food plant.

Mr. Wintersteiner exhibited the few species of *Berosus* found in the vicinity of New York City. He spoke of the characters and distribution of these species.

Mr. Davis and Mr. Barber spoke concerning their recent collecting experience in Cape May, N. J., mentioning some of the interesting species collected. Mr. Davis mentioned the number of specimens of the poisonous spider, *Lathrodectes,* observed or captured under logs and read an article concerning this species in the October number of *Everybody's Magazine.* They took 58 species of Hemiptera mostly under boards.

Mr. Pollard remarked that the seventeen year cicada had made its appearance in the pupal stage on Staten Island as he had noticed them in Clove Valley.

MEETING OF MAY 2, 1911.

Held at the American Museum of Natural History at 8.15 P. M., President C. W. Leng in the chair with twenty-one members and two visitors present.

In the absence of the regular secretary, Mr. Barber was appointed to act as secretary pro tem.

The minutes of the preceding meeting were read and approved.

Mr. Osburn, of the Photograph Committee, exhibited photographs of Henry G. Hubbard and Mr. Otto Seifert.

The curator, Dr. Lutz, reported on the progress of the work with the local collection.

Mr. Grosbeck, of the Field Committee, reported that six members enjoyed a profitable trip to Jamesburg, N. J., on April 30. The excursion to Ramsey, N. J., was to be postponed from May 14 to May 21.

Mr. Sleight exhibited three views of field meetings presented by Dr. Lutz.

Mr. Southwick reported that the collection of Dr. Zabriskie was ready for the inspection of any of the members who cared to see it, but its final disposal was uncertain. It was desirable however to keep the collection intact.

Mr. G. W. J. Angell moved that a committee be appointed to examine the collection and report upon the desirability of securing it to form a part of the local collection.

Dr. Southwick and Dr. Lutz were appointed by the president as the committee.

Dr. Raymond C. Osburn spoke on "Digestion in Insects," illustrating his remarks by numerous lantern slides. After showing a chart explaining the various steps in nutrition Dr. Osburn exhibited illustrations and remarked concerning the various kinds of digestive tracts in insects, and compared the processes of digestion with those in man.

Dr. Lutz's paper on "Geology and Insects" was accompanied by a number of interesting slides showing the geological changes which have taken place in the conformation of New Jersey and spoke concerning the effect of these changes on the dispersal of insect life. Considerable discussion followed concerning the dispersal of southern insects along the coast, in which the ocean currents were an important factor according to Professor Smith.

Mr. Shoemaker exhibited some moths from East New York, which were presented to the local collection.

MEETING OF MAY 16, 1911.

A regular meeting of the New York Entomological Society was held May 16 at 8.15 P. M. in the American Museum of Natural History, with President Leng in the chair and twenty-six members present.

Minutes of the previous meeting were read and approved. The curator reported progress in the identifying and cataloging of the local collection. The librarian reported the receipt of the following publications:

Canadian Entomologist, Vol. XLIII, No. 5.

Deutsche Entomologische Nat. Bibliothek, Vol. 2, No. 9.

Entomologische Blätter, Vol. VII, No. 4.

Coleopterorum Catalogus, parts 29–30–31.

Deutsche Entomologische Zeitschrift, 1911, No. 2.

Bull. No. 235 N. J. Agr. Exp. Station.

Index and title page to Vol. 1, Science Bulletin Museum Brooklyn Institute.

Mr. Grossbeck, chairman of the outing committee, proposed a field trip to Ramsey, N. J., on May 21, and May 27–31 inclusive to Yaphauk, L. I. Mr. Engelhardt stated that recent forest fires in the vicinity of Yaphauk might interfere somewhat with collecting in that vicinity.

Under miscellaneous business Mr. Barber read letters from Dr. Crampton, head of the department of invertebrate zoology in the Museum, and Dr. Henry F. Osborn concerning the disposition of the Seifert collection. They expressed their gratification over the active work the society was doing in building up a local collection and stated that in view of the fact that the collection in question consisted largely of local material they authorized that it be retained under the supervision of the society with the other local material.

Mr. Dow, on behalf of the Brooklyn Society, extended an invitation to the members to attend the June meeting of that society which would be of a social character.

Moved by Mr. Barber and carried that as customary the June meetings be omitted.

Dr. Southwick invited the members to accompany the Torrey Botanical Club on a collecting trip to Springdale, L. I., the following Saturday.

Under scientific discussion Mr. Davis exhibited specimens of *Anosia plexippus* taken April 25 at Lakehurst and Jamesburg and May 17 at Staten Island; he also showed 26 species of Hemiptera found by himself, Mr. Shoemaker and Mr. Engelhardt on May 14, in the washup on Rockaway Beach. Among those exhibited were *Stethaulex marmoratus* Say, *Œbalus pugnax* Fab., *Hymenarcys nervosa* Say, *Perillus circumcinctus* Stal, *Perillus exaptus* Say, *Menecles insertus* Say, *Elasmucha lateralis* Say, *Leptoglossus corculus* Say, *Largus succinctus* Linn., *Lygaeus bicrucis* Say, *Echtrichodia cruciata* Say and *Pygolampis*.

Mr. John Angell exhibited two boxes of Lucanidæ, of the group Odontolabini and the other of Lamprinæ.

Mr. Sleight exhibited a large series of specimens of *Lina scripta* and *Lina lapponica* showing much variation in color, which he has collected.

Mr. Barber exhibited a specimen of *Cicada septendecim,* which had emerged in a greenhouse at Roselle Park, N. J., on May 13. He also showed 6 newly described species of Hemiptera.

Mr. Schaeffer commented on several interesting insects which he exhibited, including two species of Neuroptera, *Mantoida maja,* the Mexican Pierid, *Eucheira socialis,* the larvæ of which make a tough nest and feed at

night, a green form of *Cicindela tranquebarica* collected at Wyandanch, L. I., *Anisodactylus lodingi* Sch., a new species from Alabama and interesting in that the head of the male is small, while that of the female is large; *Merope tuber,* a scorpion fly from Black Mts., N. C.; and a series of the N. American species of *Carabus* including *Carabus cancellatus* from Wisconsin.

Mr. Shoemaker showed specimens of *Sphæridium scarabæoides* and *bipustulatum* collected at East New York early in May.

Dr. Lutz exhibited larvæ and adults of *Anthrenus fasciatus,* which had been found feeding on hair in an upholstery establishment in Georgia. The species is European, being found in Spain, Algeria, Russia and elsewhere and this is believed to be the first record of its occurrence in America.

A box of European Coccinellidæ was shown by Mr. Leng.

Mr. Englehardt brought up the subject of hibernation of insects which provoked some discussion among the members.

MEETING OF OCTOBER 3, 1911.

The regular meeting of the New York Entomological Society was held in the American Museum of Natural History, Tuesday Evening, October 3, 1911, at 8.15 P. M., with President Leng in the chair and twenty members present.

Mr. Davis, the treasurer, reported:

Balance in Society account	$1,210.20
Balance in Journal account	39.00
Total	$1,249.20

The curator, Dr. Lutz, commented on the change in the society's meeting place from that in the balcony to the present one in the room formerly occupied by him. This change was necessary, owing to the fact that the former location would have to be used as an entrance to the new wing of the building when it was completed. Dr. Lutz also reported for the committee appointed to look after the Zabriskie collection, and stated that the committee had consulted with Dr. Zabriskie's heirs and they had requested that the society dispose of the collection as Dr. Zabriskie would have desired.

Moved by Mr. G. W. J. Angell and carried that the society present the collection to the Museum.

Suggested by Dr. Lutz that the local material in the collection be placed in the society's local collection.

As the relatives of Dr. Zabriskie had desired to know the size of the collection the secretary was directed to send them the number of specimens represented when ascertained.

Mr. Geo. J. Keller, of Newark, was proposed for membership by Mr. Grossbeck. Moved by Dr. Lutz that the by laws be suspended and on motion the secretary cast the vote of the society for Mr. Keller.

Mr. Davis stated that he had received a letter from Mr. Wm. Schaus requesting three back numbers of the Journal. Moved and carried that the desired copies be presented to Mr. Schaus.

Mr. Leng stated that the work on the Elateridæ in the local collection would be taken up the following Saturday.

Under scientific discussion Mr. Grossbeck spoke on the abundance in this locality the past September of the migratory moth, *Aletia argillacea* Hbn. This discussion was participated in by several members, all reporting the insect very abundant and records were obtained as far distant as Providence, R. I., and Buffalo, N. Y.

Dr. Lutz spoke of some examples of mimicry which he had observed in a recent trip to South America. While in British Guiana, S. A., he saw what he supposed to be brown ants running upon some leaves. Upon capturing the insects, however, and examining them he found that they were a species of Diptera. No ants were found in the immediate vicinity but some were obtained in the forest under the leaves, while the flies had been captured on leaves in an open area. He questioned very much whether this could be considered a case of mimicry. On another occasion he observed on the leaves of an acacia what appeared to be a number of Membracids or Aphids each attended by an ant. On capturing some and examining them more closely he discovered that they were a species of Membracidæ with the branching appendages of the pronotum so developed as to closely resemble an ant. So close was the resemblance that when the insects were being mounted the one mounting them attempted to separate the ants from the insects.

Dr. Lutz read from a paper by Professor Poulton, in which he discussed the large number of forms of Membracidæ with the thoracic appendages developed in a similar manner.

Dr. Crampton made some interesting remark upon the recent South American trip. They had gone down through the West Indies and stopped at several points, including Martinique and St. Lucia, making intensive studies and obtaining a conception of the obvious insect and invertebrate fauna. From thence he went into British Guiana. For the first 180 miles the country with its forests was found to be very flat. Then hills arose to a plateau of 1,300–1,400 ft. altitude. Up the rivers and through the forests very striking examples of Cryptical coloration in Orthoptera, Hymenoptera and a few Lepidoptera were noted. The country rose gradually to an altitude of 1,600 ft. near the borders of Brazil, where the cliffs rose 5,000–6,000 ft. Much material had been collected to be worked over. From the conditions observed the following general facts were noted in a given habitat: (1) In forests of the same type on different slopes certain organisms of the same type occurred; (2) In any particular forest some forms characteristic of and peculiar to that altitude occurred; (3) Irrespective of altitude in a given river system certain characteristic types occurred.

Mr. Leng asked concerning the distribution of any tiger beetles noted. Dr. Crampton said that a species had been observed on the coast that had not been found on the Amazon side of the mountains.

Mr. Leng stated that a similar condition might be inferred from the distribution of *Cychrus violaceus* in Georgia. This species was described by

Leconte from the Nakutshi Valley, which is traversed by the Tallulah River. Diligent search in the neighborhood of Clayton, Ga., carried on for two seasons by four collectors failed to disclose its presence there. The locality searched is about twenty miles from the original locality, but on Stekoa Creek instead of Tallulah River. The only specimen obtained during the two years was taken by a friend at Burton, Ga., which is again on the Tallulah River. While the evidence is negative and incomplete, it surely points to the distribution of the species being locally confined to the valley of the Tallulah.

Mr. Wm. T. Davis showed specimens of the grashopper *Dendrotettix quercus* Riley, and stated that the insect had defoliated many oak trees in the vicinity of Ridgway, N. J., in 1910 and 1911. Specimens had also been collected near Lakewood and Lakehurst, N. J., but in less numbers. Photographs of large white oaks entirely stripped of their leaves were shown and it was pointed out that if the next few years are favorable to the species, this grasshopper introduced from the southwest may become a serious pest in New Jersey.

Mr. Shoemaker stated that he had been collecting in the vicinity of Washington late in June and early July and again in September. He had obtained some 2,500 beetles on the first trip and 450 the last time. Several interesting forms were taken and some of these exhibited.

Mr. Sleight reported the capture of *Calosoma sycophan'a* at Ramsey, N. J.

Mr. Pollard reported *Catocala herodias* Strck., at Lakehurst on July 4.

The latter species has also been taken by Mr. Bucholz and Mr. Davis and it was noted that when found at sugar it did not fly off in an excited manner as the other species, but rested low on the trunk and moved off with a slow flight through the low shrubbery. This habit he thought might account for its apparent rarity. He also reported the capture of a variety of *Limenitis astyanax* at Pine Island, N. Y., in June when collecting there in company with Mr. Angell.

Mr. John Angell said that at Pine Island in an area covered with water he had collected a number of specimens of *Carabus limbatus* from stumps and noted that they were more reddish in color and coarser in punctuation than those usually found.

Mr. Barber had collected during August at Herndon, Va., near Washington, D. C. His material was not yet arranged for exhibition.

Mr. Engelhardt stated that he had collected several times during the season at Yaphank, L. I., and has made some interesting captures including *Cychrus elevatus*. He had taken as many as sixteen of these in ten minutes while looking at base of ash trees for *Xyloryctes satyrus* Fabr. In digging in the borings of the latter he had found two *Cychrus* in one tree and three in another. He considered these captures interesting in view of the fact that the locality was not one which would be considered a *Cychrus* country. He also reported *Carabus sylvosus* from the same locality at sugar.

Dr. Southwick reported on the progress of the botanical collection of food plants of insects and said he had added many additional notes.

Mr. Schaeffer exhibited a specimen of *Leptura abdominalis* taken at Lakehurst by Mr. Schott. He also stated that two species of walking sticks occurred in this locality and had been noted in material from Long Island and from Essex Falls, N. J., *Diapheromera veliei* Walsh and *Diapheromera femorata* Say. All the material from the above localities consisted of females.

Mr. Wm. T. Davis stated that *Diapheromera veliei* Walsh had been found on Staten Island and at Paterson, N. J. *Diapheromera femorata* Say, had been collected by him at Tuckerton, Manasquan, Jamesburg and Ramapo, N. J. The species are most easily told apart by the genitalia, as pointed out by Mr. Andrew N. Caudell in the Proceedings of the U. S. Nat. Museum.

Mr. Davis also exhibited a copy of the recent publication "A Guide to the Insects of Connecticut, Ereplexoptera and Orthoptera of Connecticut," by H. Walden.

Mr. Schaeffer showed a copy of the publication "A Preliminary Catalogue of the Described Species of Fulgoridæ of America North of Mexico," published some time ago by the Ohio Department of Agriculture.

Mr. Sherman stated that he had made a trip to the Lake Superior region. He had found collecting very unfavorable except along the beach. He had had twenty-one good days collecting at the latter point and took some 400 species and between 8,000 and 10,000 specimens. He spent one week at St. Paul and three weeks at Rochester in Minnesota and had visited Professor Washburn at the Experiment Station. He also had one very good day collecting at Edge Brook, near Chicago, in company with Professor Shelford.

Mr. Leng exhibited a few beetles received from Rev. T. P. Thorman, collected at Tahl Tau Mission House, Telegraph Creek, in the Cassiar District of British Columbia, about 58° N. latitude. The Cicindelidæ were represented by two specimens of *C. longilabris* without white markings and greenish metallic beneath, approaching the variety *vestalia*, establishing a far northern range for the species. Among the Carabidæ were several specimens of *Calosoma tepidum* with very roughly granulated surface, approaching a species described from Fort Vancouver under the name *æneseens*. The locality is a little further inland than Glenora, visited by Professor Wickham some years ago, and further collections by Mr. Thorman will be interesting.

Mr. Franck reported that *Pamphila ethlius* had been found feeding on the canna in some numbers near Maspeth, L. I., last season. Mr. Englehardt had noted the species in a flower garden in Prospect Park, Brooklyn. The occurrence in numbers was interesting, owing to the fact that the species is southern in its distribution.

MEETING OF DECEMBER 19, 1911.

A regular meeting of the New York Entomological Society was held at the American Museum of Natural History, President C. W. Leng in the chair with seventeen members present, and as visitors J. Chester Bradley and Mortimer Leonard, of Cornell University.

Upon motion Mr. Barber was appointed to act as secretary pro tem. in the absence of the regular secretary.

Mr. Henry Bird under title of "Rye's Newest Moth" related his experience of finding the larvæ of what he took to be *Apemea nictitans* boring in the stems of a peculiar giant grass growing in the tidal marshes near Rye. Upon rearing the larvæ however he was surprised to find that he had probably secured a new species of the genus. It appears to be close to *Apemea erepta* Grote, collected in Kansas by Professor Snow, the type of which is in the British Museum. Specimens of the moth have been sent to Mr. Hampson to compare with the type before a definite conclusion can be reached. Specimens were exhibited.

Mr. John Sherman exhibited a collection of beetles taken along the southern shore of Lake Superior in June of this year and stated that the Coleoptera were almost identical with those found about 3,700 feet up, on Mt. Washington, below the tree line. He referred to the previous results of other collectors in this region, notably LeConte, Schwartz, Hubbard, Wickham and the expedition of the U. of Michigan. As a result of these various efforts about 1,500 species of beetles had been listed from the region of Lake Superior. Hubbard states that the fauna of this lake is richer in number of species of Coleoptera than the lower lakes. Mr. Sherman read an extract from the writings of Mr. Schwartz, 1877, in which he discusses the occurrence of insects along the beach.

Most of Mr. Sherman's collecting experience was limited to two weeks in June in the vicinity of the Huron Mt. Club to the west of Marquette and later near the latter place. He described the character of the county and the condition of the collecting about these two places. But as collecting was disappointing in the smaller surrounding lakes and country, he stuck mostly to the beach collecting, in which he had two or three days of good collecting, with the lake winds favorable, in each of the localities visited. Few insects were noticed on the beach besides beetles—and of these the most common families were Elateridæ, Cerambycidæ and Buprestidæ. Altogether he took 8,000 specimens, adding about 25 species to the list of the beetles of this region. He was disappointed, however, in his search for water beetles. He mentioned particularly the rarer species taken.

Mr. Leng suggested that the non-occurrence of certain forms was due to the fact that the species found on the beach were determined by the season.

Dr. J. Chester Bradley, of Cornell University, was called upon by the President for some remarks. He responded by giving his experience in accidentally finding a number of the rare and peculiar Hemipteron *Henicocephalus culicis* Uhl. at Clayton, Georgia. As these remarks are to be published in the "Short Notes" of the Journal it is not necessary to duplicate them here.

Mr. Bradley also spoke concerning the equipment and work of the Cornell Entomological Department.

Mr. Leonard and Mr. Plunkett, students at Cornell, spoke briefly in response to the request of the President.

Mr. Leng exhibited the four species of *Plusiotis* which occur in the

United States: *lecontei, gloriosa, woodi* and *beyeri.* The latter was from Arizona and *woodi* added by Mr. Wenzel from northern Texas.

Mr. Leng also exhibited *Exochomus scapularis* Gorh. from the Huachuca Mts., Ariz. He spoke of the distribution of Coccinellidæ brought from Jamaica by Mr. Grossbeck, among which were:

Brachyacantha bistripustulata from Brownsville, Tex., through Central America to Brazil.

Cycloneda sanguinea var. *immaculata,* including slight variations from the United States, including California, throughout Central America, West Indies and South America to Brazil.

Psyllobora nana, from Cuba and Jamaica. Closely allied species occur throughout United States, Central America, South America to Brazil and West Indies.

Psyllobora nigro-vittata, described from Jamaica.

Hyperaspis connectens from West Indies and Mexico.

Procula douei, described from Jamaica.

Scymnus, several small species not named.

Of the six species, two are, so far as known, peculiar to Jamaica, the remainder are found also in tropical America, *i. e.,* Brownsville, Texas, Mexico, Central America, Venezuela, Colombia and Brazil. Two extend into temperate United States, but in modified form.

MEETING OF JANUARY 16, 1912.

A regular meeting of the New York Entomological Society was held January 16, 1912, at 8.15 P. M. in the American Museum of Natural History, President Dr. Raymond C. Osburn in the chair and sixteen members present.

The resignation of Mr. A. C. Weeks as a member of the Society was read and, on motion of Mr. Angell, was accepted with regret.

Mr. Leng spoke of the *Cicindelidæ* of the West Indies and exhibited the specimens in the collection of the American Museum and those in the collection of Mr. Harris, loaned for the purpose. He stated that three species of the genus *Tetracha* were known to occur in the West Indies and nine species of the genus *Cicindela* and that of the twelve species six were confined to the West Indies. Of the remaining six, five occur also in South America, one occurs also in the United States. Of the five which occur in South America, two are widely distributed and reach Central America and the United States as well as the West Indies. The strong relation with South America and the considerable number of species peculiar to the West Indies are apparently remarkable features of the tiger beetle fauna, but further data are required to make this certain.

Mr. Schaeffer spoke of the longicorn beetle *Crioprosopus magnificus,* and exhibited specimens of it and allied species. He stated that this species could not be referred to *Crioprosopus* with complete propriety, nor to any other established genus. The limitations of genera throughout the family Cerambycidæ are such as to require the erection of new genera often for a single

or a few species, and this insect is an example of the conditions that necessitate so large a number of genera. The number of antennal joints is twelve in this species, eleven in other species of the genus. It also differs from the other species in the form of its thorax. In some respects it is nearer to the genus *Purpuricenus* but differs again in the form of the mesosternum and has been transferred to the genus *Crioprosopus* on that account.

Mr. Schaeffer referred to the suggestion of Bates that a division of the genus be based on the punctuation of the thorax, and to the uncertainty of divisions based on the visible margin of the elytra and stated finally that the species could not properly be included in any known genus.

Mr. Schaeffer also spoke of *Temnochila virescens* and allied form, stating that on looking up the description of the synonyms he found that it would be justifiable to restore some of the older names. It is difficult to say which form is the true *virescens* of Fabricius, but assuming that the type was received through Drury to have come from our Southern States, as is most probable, the name *virescens* would apply to our eastern form in which the punctuation of the abdomen does not differ materially in the sexes—*chlorodia* Mann. is a Pacific form which should rank as a variety, *aerea* Lec. is probably a dark form of *virescens, acuta* Lec. is, however, a valid species and as pointed out by Sharp differs by having the punctuation of the abdomen entirely different in the sexes, ♀ sparsely, ♂ closely punctate and is moreover a larger insect, with more parallel form and with the sensitive spaces of the ninth and tenth antennal joints much larger. As a variety of *acuta* the form from Arizona called *nyenta* by Mr. Dow at a recent meeting may be placed, characterized by the anterior groove of the head being obsolete. Mr. Schaeffer said that specimens from Texas approached this form very closely, though a close study of long series might support its claim.

Dr. Lutz, under the title "West Indian Triplets" described the journey made by Professor Crampton, Mr. Miner and himself to the West Indian Islands last summer, illustrating his remarks with lantern slides and radiopticon views. He first, using the map and relief topograph as illustrations, briefly outlined the geography and geology of the islands, especially emphasizing the three geologic groups into which they may be divided and the mountainous character of all of the islands visited. Then St. Thomas, St. Croix, St. Kitts, Antigua, Guadaloupe, Dominica and other islands were each described in some detail, with numerous illustrations of the scenery, collecting grounds, etc. St. Thomas, long cultivated and largely deforested, did not impress him favorably as a locality of biological study, though it offered surprising opportunities for collecting caterpillars, the natives pointing out caterpillar trees, so-called from the abundance of larvæ. St. Croix in place of barren hillsides presented well-watered valleys to the view with streams and fertile banks. Night sweeping here yielded good results, but the shores though apparently well fitted to sustain tiger beetles were disappointing. Antigua's shores were inhabited by two species of *Cicindela*, and *Tetracha* was there found under stones. Rain interfered very seriously with collecting, but good results were obtained in sweeping along the margin of

the woods. Guadeloupe, larger than the islands previously mentioned, but only half as large as Rhode Island, was next visited but without striking success, and greater effort was expended in Dominica where the party remained three weeks, during which time Dr. Lutz was able to collect for several days each at Roseau, at sea level and at Laudat, at an elevation of about 1,800 feet.

Sweeping proved remunerative along the margins of mountain streams, one night's sweeping yielding 700 specimens. Beating was not successful. Sifting, usually poor on account of the thin covering of leaves on the forest floor, was occasionally very good where a suitable pocket could be found. Sugaring and collecting at light were not usually successful and Coleoptera were decidedly in the minority, Diptera and Hemiptera being more abundant. Almost incessant rain was a continual handicap and mossy and tree-fern covered mountains did not abound in desirable insects. Digging into old logs, cutting down forest trees to reach the insects concealed in the growth of epiphytes, and other strenuous methods were used to accumulate the great mass of specimens Dr. Lutz, in spite of all difficulties, was able to show.

After some collecting in the Botanic Gardens and at Long Ditton, where a curious orthopterous insect, locally called "ting ting" and making a noise like sleigh bells, was found by hunting in hollow trees, Dominica was left for a visit to Martinique, St. Lucia and Barbadoes. On account of the lateness of the hours these islands were passed quickly and finally Trinidad, simply with the statement that as to fauna it was practically a part of the mainland of South America.

Following Dr. Lutz's remarks, the insects caught arranged according to habitat, were exhibited and several were shown upon the screen with the radioptieon. An informal discussion of the results of the trip was joined in by many members.

Mr. Davis exhibited a specimen of *Polypleurus nitidus,* caught November 19, 1911, at Newberry, Fla., killed in alcohol, kept there for several days, and still, after nearly two months, not dry, but soft and limber, so that the legs and antennæ were movable. Many other specimens of the same species, caught at the same time and treated in the same way, were dry and brittle.

Mr. Schaeffer said that such experiences were not unusual with the large *Tenebrionidæ.*

MEETING OF FEBRUARY 6, 1912.

A regular meeting of the New York Entomological Society was held February 6, 1912, at 8.15 P. M., in the American Museum of Natural History, President Dr. Raymond C. Osburn in the chair, and twenty members and two visitors present.

Mr. Barber spoke of the Hemipterous insect "*Lygæus turcicus* Fab. and its Allies." He said that four species, *turcicus, kalmii, costalis* and *reclivatus* were so frequently confused that the records of their distribution were not entirely to be depended upon. The similarity in their color characters, by which alone they are separable, has led Uhler to regard them all as varieties

of *turcicus;* but Stål, the most careful and accurate systematist, with the material before him, regarded them as distinct species. Mr. Barber, with blackboard drawings to illustrate his remarks, gave the characters by which the species are separable and the distribution of each.

L. turcicus Fab. has the red mark on the vertex forked anteriorly, the clavus before the middle red, the membrane black with its edge and surface concolorous. It was described from New York, but is apparently rare in this vicinity. Stål had material from Illinois, Montandon from Pennsylvania, Missouri and Colorado. About Washington, D. C., Mr. Banks has taken it on *Ceanothus* (New Jersey Tea) and Mr. Engelhardt has a specimen from Long Island.

L. Kalmii Stål has the red mark on the vertex usually quadrate, the clavus black and the membrane more or less broadly banded with white and with or without a white discal spot. It varies considerably in its markings, and Stål lists var. *A*, transverse red band of pronotum entire, white discal spot of membrane distinct. Var. *B*, transverse red band of pronotum divided into three spots, white discal spot of membrane distinct. Var. *C*, membrane black without discal white spot or prominent white border. Var. *melanodermus* Mont. described in 1893 from St. Louis, Mo., is more melanic than the above. The varieties *A* and *B* are western; var. *C* is common in summer on milkweed throughout the east and is often confused with the preceding.

L. reclivatus Say clavus red, behind black or marked with black, membrane narrowly bordered with white, with or without discal white spot and two small triangular white spots at base, hemelytra ornamented in the basal interior angle with a small black spot. Described from Missouri Territory, which Mr. Barber showed by map, is not synonymous with our present state of that name, and known from southwestern states and Mexico. Var. *enotus* Say lacks the discal white spot of membrane.

L. costalis H. S. seems to differ mainly in the reduction of the size of the black spot on the costal part of the hemelytra. It is closely related to *reclivatus* and doubtfully recognized in specimens from Arizona by Mr. Van Duzee.

Mr. Barber exhibited specimens of the species referred to.

Mr. Comstock spoke "On some *Lycænidæ* from New Mexico and Old Mexico" and said that material collected by John Woodgate at Jemez Springs, Sandoval Co., New Mexico, contained many interesting species, contrasting sharply with the fauna of Fort Wingate, where this collector was formerly located. He exhibited *Thecla itys, calanus* and *arota,* taken at the Jemez Springs locality. He also spoke of species taken in Central Mexico at Cuernavaca, *Everes comyntes, Hemiargus hanno,* to the wide range of the former and the differences between the latter and species described in the Biologia. Mr. Comstock also spoke of the variations in these and other species of *Lycænidæ* and exhibited one of his boxes showing a series of males both upper and under side, with females also showing upper and under side arranged below. Apart from the variation series he showed homotypes, *i. e.,*

specimens carefully compared with the type and metatypes or specimens labeled by the author.

Mr. Comstock closed with a reference to a recent article by Dr. Barnes on *Thecla clytie, leda* and *ines,* protesting against the union of the three species and expressed the opinion that such union was unwarranted.

Dr. Lutz added that Cuernavaca, mentioned by Mr. Comstock was south of the City of Mexico, on the Pacific slope and in a very mountainous region. Mr. Harris spoke of the "Cicindelidæ of the York Coast, Maine," describing the locality and exhibiting series of the four species found there, viz: *repanda, hirticollis, marginata* and *generosa,* with specimens of the same species from other localities to show the racial differences observed. Both *marginata* and *generosa* were found close to the surf and flying together, an unusual environment for *generosa.* Mr. Harris's paper will be printed in full in the JOURNAL.

It was discussed by Messrs. Leng, Angell and Lutz. Mr. Angell stated that he had found *generosa* at Ipswich, Mass., in a valley between sand dunes. Dr. Lutz said that he had collected crickets on the York Coast and in protected coves found southern forms, while northern forms inhabited the tops of the cliffs.

Dr. Osburn said that certain marine forms were found in sheltered coves further north than they could be found in general.

Mr. Barber presented a specimen of *Anthophilax malachiticus* taken at Fort Montgomery, N. Y., by himself a few years ago, to the local collection, also a specimen of *Toxotus vittiger.*

MEETING OF FEBRUARY 20, 1912.

Held at the American Museum of Natural History at 8.15 P. M. President Raymond C. Osburn in the chair with fifteen members and one visitor in attendance.

In the absence of the regular secretary Mr. Barber was elected secretary pro tem.

The curator, Dr. Lutz, exhibited some of the Carabidæ of the local collection to show how the work was being carried on by the members interested. He stated that the collection of Neuroptera, donated by Mr. Grossbeck to the local collection was arranged and another installment of Dr. Southwick's "food plants" had been received.

Dr. Lutz, for the publication committee, asked that written suggestions be submitted to the committee in reference to the future conduct of the JOURNAL.

Mr. Davis presented the resignation of Mr. Ellison A. Smyth, of Blacksburg, Va., as an active member. On motion of Mr. Angell the resignation was accepted with regret.

Mr. Lutz by aid of the radiopticon gave an illustrated talk on "Geographic Distribution of Environment" based on Schimper's "Plant Geography upon a Physiological Basis."

Mr. Davis read a paper "Insects on a Recently Felled Pine Tree," and exhibited a box containing the results of this experience. Mr. Davis also exhibited specimens of some of the more important plants upon which they collected insects in Florida.

MEETING OF MARCH 5, 1912.

A regular meeting of the New York Entomological Society was held at the American Museum of Natural History, President Dr. Raymond C. Osburn in the chair and seventeen members present.

Mr. Mutschler gave some "Notes and Exhibition of Some Species of Cerambycidæ in the Collection of the American Museum of Natural History." He referred particularly to the four described species of *Tragosoma,* all of which are treated by Hamilton as one under the name *depsarium.* He called attention to the error by which Casey's species are treated as female by Hamilton while the description expressly states the male sex; and to the differences in pilosity as well as in other characters between Casey's species and *depsarium.* He also referred to specimens of *Necydalis mellitus* taken at West Farms and to be added to the local collection, and to a Mexican specimen of *Purpuricenus* like *humeralis* in color and form. Mr. Mutschler, referring to the general collection said that it contained a total of 1,125 species, 368 North American, 757 foreign, having recently been enlarged by a gift from Mr. Leng; he called attention to some of its especially interesting features, the types of *Anthophilax hoffmani* Beut, the type of *Molorchus longicollis* from the Edwards collection and the series of Black Mountain longhorns collected by Beutenmuller, including the curious ant-like *Michtysoma heterodoxum* found running on oak trees.

Mr. Mutschler's remarks were discussed by Messrs. Schaeffer and Leng on the subject of *Tragosoma,* the former pointing out the instability of the characters used to separate *harrisi, spiculum* and *pilosicollis* from *depsarium,* the form of the tooth at the side of the thorax, the punctuation, the pilosity and the form of the body being all equally variable; the latter maintaining that while the great similarity indicated a common origin for all the forms described, the differences were sufficient to warrant considering the names as indicative of geographical races rather than as synonyms.

Mr. Davis, speaking of his experience in collecting *Michthysoma* in the mountains of Northern Georgia, said that they were not confined to oaks. That tree being abundant in the mountains often showed *Michthysoma* running on its trunk but the same was true of other trees also. He said the insect was locally abundant on Black Rock Mountain in June but was not found in July, and was not equally distributed over the mountain, but more abundant in places on the ridges at an elevation of about 3,500 feet. Mr. Grossbeck read a paper on "The Value of Genital Armature in Systematic Work," illustrated by drawings thrown on the screen by the radiopticon. As a preliminary he stated that he had never found differences in genitalia that

were not correlated with differences in structure or maculation and that the great value of the genitalia lies in the positive confirmation they afford of specific differences less definitely indicated by other characters. Mr. Grossbeck then outlined the work that has been done on genitalia, referring to the papers of Herold, Kirby and Spence, Burmeister, de Haan, Scudder and Burgess, White, Grosse and Pierce, showing on the screen the different parts and the varying names that have been applied to them and expressing a regret that a greater uniformity in this respect does not prevail. He passed next to examples of insects superficially similar but readily differentiated by the differences in the genitalia, which in each case were shown on the screen. These included *Pero morrisonatus,* a boreal species, and *Pero marmoratus,* a species of the transition zone, which are very similar, distinguishable only with difficulty unless fresh and perfect, but entirely unlike in genitalia. *Catopyrrha coloraria,* which has been listed with three varieties, but an inspection of the genitalia shows two distinct species are concerned. *Selidosoma* sp., from San Diego, which appears to be a variable species until examination of genitalia shows that it is divisible into two sections which are then found to be also divisible by color characters; the *Glaucina-Cœnochatis* group of about twenty species from the desert regions of the southwest, which afford another instance of the value of genitalia in separating species; *Cicada lyricen* and *similaris,* which are practically indistinguishable from above, but different beneath and totally unlike in genitalia.

The paper was discussed by many of the members, all agreeing as to the value of the genital armature as a court of last resort. Mr. Leng called attention to the papers by Verhoeff on the genitalia of Coleoptera. Mr. Schaeffer spoke of the great value of the genitalia in *Lachnosterna,* especially the females, which are practically inseparable otherwise; which, however, as has been demonstrated, are as variable as any other structures, but not more so. Dr. Lutz referred to recent studies in *Bombus* as confirmatory of Mr. Grossbeck's statements and pointed out that an observed identity in genitalia would aid in establishing synonymy as well as observed differences would aid in establishing validity of similar species. Mr. Davis said that genitalia might be similar, but species nevertheless distinct as in certain *Cicada.* Dr. Osburn referred to the terminal abdominal appendages, homologous with claspers of other orders, in dragon flies as affording most valuable characters for classification.

Mr. Davis then exhibited the recently published volume on the "Plants of Southern New Jersey," by Witmer Stone, and called especial attention to his division of the Coastal Plain in Southern New Jersey, viz: West Jersey or Middle, Pine Barrens, Coastal Strip, Cape May and Maritime. He also referred to the entertaining historical features of the volume and read extracts from the quoted letters of Dr. Torrey, dated in 1818. Mr. Davis also exhibited Hemiptera collected by himself in Florida last November and determined by Mr. Barber. He said that many specimens were smaller than the normal size for the same species.

Mr. Dickerson exhibited and presented to the local collection specimens of *Tragidion coquus* collected in Cumberland Co., N. J., in September, on the flowers of immortelles or straw flowers, growing near a wood in which pine and deciduous trees occurred.

Dr. Osburn called attention to an article in the Ohio Naturalist in which L. B. Walton describes *Symbiotes duryi* and gives a discussion of its position and habits. The beetles were found under slightly decayed hardwood log, which was partly covered with one of the lower forms of fungi. The author points out that *ulkei* and *minor* have been erroneously referred to *Symbiotes,* being really referable to *Rhymbus.*

Dr. Osburn also presented to the library papers on dragon flies, which were dupilcated in his own library and suggested that all the members might aid the library by doing likewise.

MEETING OF MARCH 19, 1912.

A regular meeting of the New York Entomological Society was held March 19, 1912, in the American Museum of Natural History, at 8.15 P. M., President Dr. Raymond C. Osburn in the chair, with 17 members present.

The field committee reported that the three principal excursions of 1912 would be Decoration Day to Lakehurst, July 4 to Newfoundland, and Labor Day to Yaphank, and that probably additional shorter trips could be arranged on suggestion by any member having a good place in mind, and that such could be announced through the Bulletin.

Mr. Grossbeck announced the death on March 12 of Prof. John B. Smith, and offered the following preamble and resolution, which on motion of Mr. Angell was unanimously adopted:

WHEREAS the New York Entomological Society has learned with deep sorrow of the death of Professor John B. Smith, Sc.D., state entomologist of New Jersey, professor of entomology in Rutgers College, and corresponding member of the Society, Therefore be it

Resolved that the regret of the members of the Society for the great loss sustained by them and the science of entomology, in the untimely death of a friend and fellow worker, be expressed in this form and entered on the minutes of its meetings and that a copy of this resolution be sent to his family.

Mr. Engelhardt under the title "Notes on Lepidoptera collected in Florida in November" described his four weeks journey in Florida last November, during which he visited Jacksonville, St. Augustine, Anastasia Island, Daytona, Palm Beach, Miami, Knights Key, Key West, Tampa, Ocala, Leesburg, Sanford, Enterprise, Palatka, returning to Jacksonville by the St. Johns River, spending about two days in each place and five in Miami, where he was able to spend some time on Biscayne Bay, and to ascend the Miami River to the edge of the Everglades. Mr. Engelhardt spoke of the long leaf pine, cypress, Spanish moss and palmetto becoming conspicuous features as soon as the Savannah River was reached on the way south, and of the live

oaks which replace in part the deciduous oaks of the north. For each of the places visited he mentioned the features affecting the insect life, the dense growth of live oak and bayberry on Anastasia Island, and the wash-up on its beach, the sand dunes, moist meadows and wild flowers back of the beach; the great arc lights at Daytona making good evening collecting there as well as the varied swamps and pine woods back of the town; the great plenty of insect life among the varied subtropical vegetation at Palm Beach and Miami, especially upon the blossoms of the pawpaw in the subtropical swamps across the Miami River; the excellent collecting to be found in the suburbs of Key West and Tampa, quickly reached by trolley, and in the cypress swamp near Ocala easily penetrated by reason of an old railroad track. Mr. Engelhardt exhibited a selection of the Lepidoptera caught during his journey divided to show the differences between the northern half of the state where forests of long leaf, yellow and scrub pine are found, and where northern trees like sweetgum, sourgum and tulip still occur, the region subject to killing frost as far as oranges are concerned; and the southern half of the state including only species which were not found in the northern half, this southern half being characterized by the absence of Spanish moss and the presence of introduced subtropical plants and broader leaved epiphytes. He called attention to the effect produced in some species by a continuous food supply, a continuous development apparently resulting therefrom. For instance the larva of *Artace punctistriga* was found on live oak trunk and developed into imago within five days, and in the case of *Liminetis* larvæ the hibernaculum usual in the north was absent. In other cases, however, while no true hibernating stage can be alleged, there is a quiescent or resting season. Thus a chrysalis of *Papilio cresphontes* is still unhatched and larvæ of *Limacodidæ* are still unchanged. There may be a connection between the differences observed in the behavior of these insects and the abundance of certain butterflies compared with the seasonal absence of others. The influence of climate and continuous food supply needs further study to elucidate the problems suggested. Mr. Engelhardt spoke also of the effect of cooler mornings in making the insect take refuge among the leaves of trees and bushes by which the beating and sweeping became more productive at such seasons. Owing to the lateness of hour he did not comment on the individual species captured, of which a list will be published later.

Mr. Grossbeck showed the Lepidoptera collected in Florida during the same month by Dr. Lutz and Mr. Leng. He pointed out as specially interesting the Geometer *Glena texanaria* taken by Dr. Lutz and speaking of the Geometers taken by Mr. Engelhardt said that *Stenotrachelys approximaria*, *Synelys timandrata* and *S. subquadrata* were especially rare, each being previously known by one or two specimens outside the type.

Mr. Davis exhibited thirty-eight species of Florida butterflies which he obtained during the same month of November at Jacksonville, Lakeland and Punta Gorda. Twenty-three of them belonged to species more or less common in the vicinity of New York or in New Jersey, while fifteen species were

more southern. Among those of chief interest were *Pamphila arpa, Phamphila striga* and *Pamphila floridæ*. Also a *Papilio asterias* taken at Lakeland, Fla., that was flying about with but three wings, the lower left hand wing being undeveloped and represented by a pad of 6 mm. in length.

Mr. Davis also exhibited specimens of three species of the Hemipterous genus *Pselliopus,* including the recently described species *barberi.* On Long Island, Staten Island and in New Jersey *P. cinctus* only has been collected, while in Maryland and Virginia *P. cinctus* and *P. barberi* occur together.

Mr. Wintersteiner gave a "Note on *Hydrophilus*" illustrated by specimens of the species and drawings of the abdomen and tarsal joints. He pointed out the character by which the genera recognized by European authors are separated and those by which the species *insularis, triangularis, ater* and its variety *intermedius* are to be known, by which it appears that *ater* occurs in Florida, Antilles and Central America.

Mr. Wintersteiner's paper will be published in full in the JOURNAL.

Mr. Schaeffer exhibited two specimens of *Coccinella undecimpunctata,* part of a number taken at Wollaston, Mass., by Mr. Johnson, September 5, 1911. This is a European species which appears in the last Henshaw supplement to the Check List, but is not mentioned by Colonel Casey, and is treated in Mr. Leng's paper as unknown in America except doubtfully by its variety *menetriesi.*

MEETING OF APRIL 2, 1912.

A regular meeting of the New York Entomological Society was held April 2, 1912, in the American Museum of Natural History, at 8.15 P. M., President Dr. Raymond C. Osburn in the chair, with sixteen members present.

The curator reported continued work by Mr. Mutschler on the local collection and exhibited a part of the collection of spiders in vials, which in addition to the authentic name showed also the synonyms. He called attention to the value of this collection, in which are incorporated the collections of Pike and of Petrunkevitch and the identifications of Emerton.

Mr. Hall exhibited a number of specimens and spoke on "Collecting Butterflies in the White Mountains"; he illustrated on the blackboard the relation of the localities visited and spoke particularly of the following species: *Œneis* (*Chianobas*) *semidea* and *Brenthis montinus,* both rather common on Mt. Washington, in Tuckerman's Ravine and on the side of Mt. Pleasant, *montinus* occurring as low as the tree line and *semidea* even lower down, the best season for these butterflies being the first week of August. *Eugonia* (*Grapta*) *J-album, Polygonia* (*Grapta*) *faunus, P. progne* were abundant at Crawford House and at Jefferson Highlands about August 15, but of *P. gracilis* only one specimen was taken. These species appear to be somewhat local in their distribution, for at Sugar Hill one year there were no *J-album* or *progne,* though plenty at Profile House only three miles away. *Eurymus* (*Colias*) *philodice* was represented by a variety approaching *anthyale,* smaller than the typical form and flying at the end of July. *Cercyonis*

(*Satyrus*) *alope* was abundant at Sugar Hill in the form *nephele* only. *Argynnis atlantis* was very common. *A. aphrodite,* represented by a small dark form was also common at Sugar Hill. *A. cybele* was however rare. *Pontia* (*Pieris*) *napi* form *oleracea* was also abundant.

Mr. Hall's remarks were discussed by Messrs. Comstock, Forbes, Engelhardt, Sherman and Dr. Osburn. Mr. Comstock said that *Eugonia J-album* feeds on white birch (*Betula populifolia*) and quoted also Mr. Watson's records at Sloatsburg, N. Y., June 7 and at Alpine, N. J., June 10, where the larvæ were abundant, almost every tree having a colony. Mr. Engelhardt mentioned apple as another food plant and suggested that it might be a general feeder. Mr. Comstock thought there might be some error, as in his experience it was confined to white birch. It was also said that *P. faunus* feeds on willow, and *P. progne* on currant. The small dark forms of *Argynnis* mentioned by Mr. Hall were stated to be repeated on the coast of Maine and to be probably a result of cold and moisture.

Mr. Leng read a paper on "Coleoptera collected in Iceland by L. P. Gratacap," in which the island was described and the relation of its insects to those of other northern regions discussed. The beetles collected by Mr. Gratacap, comprising nearly all the ground beetles known to occur in Iceland, were exhibited.

Mr. G. W. J. Angell exhibited specimens of *Carabus chamissonis* from Alaska, the type locality, and from the White Mountains, Labrador and Greenland, the last having received the varietal name *groenlandicus,* and remarked that this variety was smaller and more oval than the others, and that it was omitted in the list of Greenland species prepared by J. C. Nielsen for part 2 of the insects of the Denmark Expedition.

Dr. Lutz exhibited a specimen of the geometer *Brephos infans* caught at Ramsey, N. J., on March 31, and remarked that it should be included in the New Jersey list.

A discussion of the distribution and habits of this insect was held by Messrs. Comstock, Forbes, Bischoff, Hall, Sleight, Engelhardt and Pollard and it appeared that it occurred at Worcester, Mass., Hemlock Falls, N. J., Jamesburg, N. J., Wayandanch, L. I., on Staten Island and at Sloatsburg, N. Y., always in places where its food plant, white birch, was abundant and very early in the season; the dates being from March 29 to April 30. Often it flies high among the tree tops, but at times close to the ground according to weather conditions. Subsequently Mr. Comstock supplied exact records as follows:

Brephos infans, Hemlock Falls, N. J., April 6, 1902, saw several and caught one flying high (Watson and Comstock); Hemlock Falls, N. J., April 20, 1902, saw four (Watson and Comstock); Hemlock Falls, N. J., March 29, 1903, sow one (Comstock); Jamesburg, N. J., April 23, 1905, caught one (Watson); Sloatsburg, N. Y., April 23, 1905, caught one (J. H. Cook); Sloatsburg, N. Y., April 30, 1905, saw two (C. H. Sunderland).

Psychomorpha epimenis, Sloatsburg, N. Y., April 30, 1905, common (C. H. Sunderland).

Feralia jocosa, Ramapo, N. J., May 15, 1904, caught one (Watson).

Mr. Pollard mentioned the similarity in the flight of *Brephos infans* and *Psychomorpha epimenis,* which latter species Mr. Comstock said was common at Sloatsburg.

Mr. Engelhardt mentioned *Feralia jocosa* as another species of early appearance, abundant among the hemlocks between Scarsdale and White Plains, and remarked that this species hatched about the end of March regardless of the weather. Mr. Dickerson remarked that the controlling factor might be the accumulated heat units. Mr. Bischoff said that this species occurred also at Hemlock Falls, and Mr. Comstock added Ramapo, May 15, from the records of Mr. C. H. Sunderland.

Dr. Forbes mentioned *Apocheima rachelæ,* described from the Canadian Rockies, but common in New England, as another species that flew only in April snow storms.

MEETING OF APRIL 16, 1912.

A regular meeting of the New York Entomological Society was held April 16, 1912, in The American Museum of Natural History, at 8.15 P. M., President Dr. Raymond C. Osburn in the chair and twelve members present.

The curator reported on his recent work on local Mallophaga, stating that he had secured a permit to shoot birds so as to secure specimens in that parasitic order, and that an arrangement had been affected with Mr. Beebe at the Zoological Garden to secure specimens from the birds that died there.

Mr. Pollard stated that his assistant, Mr. Howard H. Cleaves, had obtained the exclusive privilege of collecting birds killed by flying against the new light house near Richmond, Staten Island, and that he would gladly turn over the Mallophaga to the local collection, as the Staten Island Association of Arts and Sciences had no collection in that order.

A letter from F. H. Wolley Dod, of Alberta, expressive of his regret upon learning of the death of Prof. John B. Smith was read.

Mr. Schaeffer nominated Dr. C. H. Tyler Townsend as an active member of the Society. On motion of Mr. Angell the by-laws were suspended and Dr. Townsend was immediately elected.

Mr. Schaeffer distributed copies of "Memoirs of The Coleoptera III," sent to him by the author, Colonel Thos. L. Casey, for the purpose.

Mr. Schaeffer offered some "Remarks on the Leconte Collection" which he recently examined in part and expressed his admiration for the reverent care with which Mr. Henshaw has preserved the specimens in their original boxes, just as they were left by Dr. Leconte. On account of this collection being the oldest and well preserved collection of North American beetles, the number of specimens it contains that have been compared with the types of foreign authors, like Mannerheim, Chaudoir and Motschulsky, as well as the very large number of types resulting from Dr. Leconte's pioneer work in Coleoptera, it is of extraordinary interest to workers in that order. Its value is greatly increased in this respect by the manner in which it has been

handled, two of the original boxes being now placed in glass-covered drawers, with Dr. Leconte's catalogue, containing his key to the colored disks largely used to designate localities. It is regrettable that it was not the custom to designate type specimens in Dr. Leconte's time. Mr. Schaeffer said there was little difficulty for an experienced Coleopterist to recognize the types, though often more than one species as now recognized, will be found under the label.

To a large extent the Leconte collection is duplicated in the Horn collection, but in many cases reference to the Leconte types is absolutely necessary to determine closely allied species. Mr. Schaeffer mentioned particularly the species of *Helephorus* which he compared for Mr. Wintersteiner and *Collops* for his own work and stated also that one of the results of his visit must be the removal of *Platynus sinuatus* from our local lists, all of Dr. Leconte's specimens being from far northern localities and not at all like our local insects.

Mr. Schaeffer's remarks were discussed by Mr. Angell and Dr. Forbes. the latter stating that the field numbers used by Dr. Harris in conjunction with his note books gave the most precise data in regard to his specimens.

Dr. William T. M. Forbes spoke on "Some Structural Characters in Noctuid Moths," illustrating his remarks by drawings thrown on the screen by the radiopticon, by boxes of specimens and by microscopic slides. The parts of the head, palpi, antennæ, the venation of the wings, the hairs of the eyes, the pupal characteristics and other characters were dealt with in an exhaustive manner, not with a view of constructing a dichotomous key, but rather to bring out the true relationship as evidenced by the aggregate of all the characters involved. Dr. Osburn at the close of Dr. Forbes' remarks expressed the gratification of the Society in listening to so able and interesting a treatment of a difficult subject.

Dr. Forbes's remarks were discussed by Messrs. Schaeffer, Comstock and Dr. Osburn and various additional points respecting the taxonomic value of the lashed eyes, the genitalia, the sculpture of the eggs, the antennal joints were brought out.

Dr. Raymond C. Osburn spoke of "Our Knowledge of the Larval Stages of Syrphidæ," reviewing the published data and illustrating his remarks with the radiopticon. He exhibited specimens of *Microdon tristis* and its pupal case, *Eristalis tenax* and pupa, *Xanthogramma emarginata,* egg and female that laid it, collected by Mr. Davis, and a vial containing larva of *Microdon tristis* taken by Mr. Davis at Newfoundland, N. J., in ant's nests, commenting upon the similarity to a mollusc which has in fact led to *Microdon* larvæ being described as such. Dr. Osburn's paper will later be published in full.

Discussion by Messrs. Angell, Engelhardt, Pollard and Schaeffer followed; the difficulty of breeding bark species and the work of Burke being alluded to and explained by Dr. Osburn.

MEETING OF MAY 7, 1912.

A regular meeting of the New York Entomological Society was held May 7, 1912, in the American Museum of Natural History, at 8.15 P. M., President Dr. Raymond C. Osburn in the chair and 15 members present.

Mr. Pollard announced that a memorial meeting in honor of the late Prof. John B. Smith would be held on May 28, under the auspices of the Staten Island Association of Arts and Sciences, at which the members of the Society were invited to be present.

Mr. Engelhardt spoke of "Early Spring Collecting" illustrating his remarks by specimens collected at Central Park, Long Island, this spring. He said in part:

The Long Island prairie or so-called Hempstead plains finds its eastern limit at Central Park, L. I., from there on continuing east begin the typical pine barrens. The prairie is the region visited by Wm. T. Davis during the fall of 1911, when he secured the unusual record of *Tetracha virginica*. This region can be reached within one hour from either Brooklyn or New York and combining as it does prairie and pine barren, it ought to receive special attention from collectors during the present season, for the original prairie is fast yielding to cultivation. The following condensed enumeration represents part of the captures made during April, 1912:

Some of the Coleoptera collected on dead pines were: *Boros unicolor*, under bark, April 7, still hibernating and in clusters of five or six; *Corelus guttulatus*, three specimens; *Rhizophagus cylindricus*, two specimens; *Hister parallelus*, *Platysoma lecontei*, *Plegaderus transversus*, these three Histers, especially the last named, exceedingly numerous: *Dicerca obscura*, var. *lurida*, *Alaus myops*, *Corymbites cylindriformis*, *Callidium antennatum*, *Hypophlœus parallelus*, common; *Batrisodes globosus*, *Tyrus humeralis*, etc., etc. The following were swarming about a pine cut during the winter or late fall. *Hylobius pales*, *Pissodes strobi*, *Dendroctonus terebrans*, *Hylurgops glabratus*, *Phlœosimus dentatus*, *Tomicus calligraphus*, *Rhagium lineatum*, *Dinoderus cribratus*, etc. Under bark of young oaks injured by wood fires, *Lœmophlœus biguttatus*, *L. adustus*, *L. convexulus*, *Litargus sexpunctatus*, *Sacium lunatum*, etc. Other miscellaneous beetles *Ditoma pinicola*, *Clerus quadriguttatus*, *Epurea erichsoni*, *Serica iricolor*, *Valgus squamiger*, *Bruchus nigrinus*, *Notoxus monodon*, *Melanophthalma pumila*, *Tomarus pulchellus*, *Orsodachna atra*, var. *vittata*, common on pussy willows, *Dorytomus brevicollis* on catkins of poplar, *Xanthonia decemnotata*, *Crepidodera rufipes* beaten from Pine, *Rhinomacer pilosus*, etc.

Diptera and Hymenoptera: Large numbers collected on pussy willows. Among Diptera the Syrphidæ and Tachinidæ were especially well represented. Among Hymenoptera especially bees of various families. Four specimens of the large syrphid *Criorhina verbosa* were secured. *Zelima nigra*, another Syrphid, was obtained ex pupa. The larvæ live under bark of decaying pine trees. They were very numerous; the first adult emerged April 20. Mr.

Engelhardt exhibited the larvæ and the pupa and stated that the pupal stage lasted about two weeks.

Hemiptera: Of especial interest was the large number of the Aradid, *Neuroctenus simplex,* found under oak bark in burned over district. They were in clusters of twenty to thirty in such situations and eggs, nymphs and adults were included. The examination of three trees disclosed at least five hundred specimens. *Fitchia nigrovitta,* considered uncommon in the winged form, *Milyas cinctus, Reduviolus pallescens,* etc., were actively flying about on sunny days.

Lepidoptera: Beating the branches of oaks with dry leaves still attached furnished some interesting records of Noctuidæ this spring and surprising is the number of specimens secured by this method of species usually considered rare. For example, *Copipanoles cubilis*, reckoned a northern species and recorded from Massachusetts and the mountains of Pennsylvania has to my knowledge been taken but once on Long Island, namely at Lake Ronkonkoma, by Mr. Shoemaker. Large series from Central Park are now in the hands of several collectors. The species shows great variation. Mr. Kaiser, of the Brooklyn Society, has secured eggs and the young larvæ are now feeding on oak. *Jodia rufago,* also heretofore considered rare has been taken in still larger numbers by the method of beating branches with dry leaves. Other captures include *Actinotia ramosula, Tæniocampa subterminata, Scopelosoma moffatiana, Psaphidia resumens, Phoberia atomaris,* while fairly common, is difficult to capture on account of its swift flight and habitat among scrub oaks.

Butterflies on account of the prolonged cold and wet season were uncommon during April. *Thecla angustus* and *Thecla niphon* were taken on pussy willow April 17. *Thecla irus* on April 27. On that date *Lycæna pseudargiolus,* represented by the three spring varieties was fairly common; *violacea* predominates in the pine barrens, while those taken in the deciduous forests are largely representative of the varieties *marginata* and *lucia.*

In conclusion Mr. Engelhardt again urged the members to visit this Long Island prairie near Central Park Station early in June, when the sweeping would be at its best and he predicted that many surprising records would result.

Mr. Engelhardt's remarks were discussed by Dr. Forbes, Dr. Osburn and Mr. Schaeffer. Dr. Forbes mentioned interesting forms of *Lycæna pseudargiolus.* Mr. Schaeffer referred to a number of remarkable Long Island records of insects captured and urged that collectors should spend more time there.

Mr. Shoemaker read a paper entitled "Notes on Baiting for Beetles at Eagle Rock" which will be printed in full in the JOURNAL. This paper was discussed by Mr. Schaeffer, Dr. Osburn and Mr. Leng.

Dr. Forbes stated that the genus *Heliochilus* would have to be added to our local list. It has heretofore been known from the Southern States and the tropics. It belongs to a group which includes the cotton worm, distinguished by the depression of the front wing, which have by some been thought to be capable of producing sound.

Mr. Schaeffer said that *Carabus baccivorus* according to Roeschke is a pure synonym of *C. tædatus*, while *agassisi, oregonensis* and *gladiator*, the latter being new to our check list, are valid varieties of *tædatus*. The type form is confined to Alaska, *gladiator* occurs in Washington State, is narrower and has the thorax narrow to the base; *agassisi* occurs in Colorado, Utah and Arizona and has a shorter thorax; *oregonensis* is a northern form occurring in the higher mountains of the West and has a longer thorax. Neither of the last two have the ovate elytra with deep pits, which occur in *tædatus* and *gladiator*. The form called *canadensis* is simply a little smoother than *agassisi*.

Mr. Angell in discussing Mr. Schaeffer's remarks said that Dr. Van Dyke had discovered still another form in the high Sierras of California.

Dr. Lutz called attention to a volume constituting part of a series of volumes dealing with the vegetation of the earth, entitled "Phytogeographic Survey of North America" by Harschberger and stated that as the distribution of insects was intimately connected with that of the plants, such a volume would be of special interest to the members of the Society, increased by the fact that much space was allotted to the pine barrens of New Jersey.

Mr. Shoemaker stated that he had collected *Onthophagus nuchicornis* and *Sphæridium bipustulatum* in some numbers in the swamps near East New York.

Dr. Forbes invited the members to visit during the summer at the Camp at Mount Tobey near Sunderland, Mass., where the southern limit of the Canadian zone and the northern limit of the Carolinian approach each other within 15 miles, and where trolley communication made collecting in both zones feasible.

Mr. Leng presented a proposed programme for the meetings of next fall and winter, looking to a combined effort by the members to elucidate the environment under which local insecets are found.

After discussion by Dr. Lutz, Mr. Pollard and Dr. Osburn the proposal was referred to the executive committee with a request to report thereon at the next meeting.